

Our Docket Number Bayer 9998.2

Client Docket Number HR 161-US MN/pe

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS : A. STEINBUCHER ET AL.

SERIAL NO. : DIVISIONAL APPLICATION OF 08/976, 063, FILED 21  
NOVEMBER 1997

FILED : 28 DECEMBER 2000

FOR : SYNTHETIC ENZYMES FOR THE PRODUCTION OF  
CONIFERYL ALCOHOL, CONIFERYLALDEHYDE, FERULIC  
ACID, VANILLIN AND VANILLIC ACID AND THEIR USE

ART UNIT : 1652

EXAMINER : P. TUNG



December 28, 2000

Assistant Commissioner of Patents  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT**

SIR:

Pursuant to 37 CFR §§ 1.56, 1.97 and 1.98, Applicants respectfully request that the Examiner consider the references listed on the attached Form PTO-1449.

**I. Timeliness, Fees and Certifications in lieu of Fees**

- ☒ A. This information disclosure statement is being filed within three months of the filing date of the application, or within three months of entry into the national stage, or before the mailing of a first Office Action on the merits. Pursuant to 37

CFR § 1.97(b), consideration of this information disclosure statement does not require a fee or a statement under 37 CFR § 1.97(e). However, should the Assistant Commissioner determine that a fee is, in fact, due, the Assistant Commissioner is hereby authorized to charge the fee to Deposit Account No. 14-1263.

- ☐ B. This information disclosure statement is being filed after the period in A above, but before the mailing of either a final action or a notice of allowance. Pursuant to 37 CFR § 1.97(c), consideration of this information disclosure statement requires a fee or a statement under 37 CFR § 1.97(e):
- ☐ 1. The Assistant Commissioner is hereby authorized to charge the fee set forth in 37 CFR § 1.17(p) to Deposit Account No. 14-1263.
- ☐ 2. Applicants hereby state that each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.
- ☐ 3. Applicants hereby state that no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign patent application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 CFR § 1.56 more than three months prior to the filing of this information disclosure statement.

☐ C. This information disclosure statement is being filed after the period specified in B above, but on or before the payment of the issue fee. Pursuant to 37 CFR § 1.97(d), consideration of this information disclosure statement requires a petition, which Applicants hereby request, and payment of the petition fee, which is set forth in 37 CFR § 1.17(i), and which the Assistant Commissioner is hereby authorized to charge to Deposit Account No. 14-1263. Consideration of this information disclosure statement also requires a statement under 37 CFR § 1.97(e):

☐ 1. Applicants hereby state that each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

☐ 2. Applicants hereby state that no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign patent application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 CFR § 1.56 more than three months prior to the filing of this information disclosure statement.

## **II. Copies of Listed References**

☐ A. Copies of all references listed on the attached Form PTO-1449 are being supplied.

- ☒ B. Copies of all references listed on the attached Form PTO-1449 have already been supplied during the prosecution of prior application Serial No. 08/976,063 filed November 21, 1997, from which the present application claims priority pursuant to 35 USC § 120. Therefore, pursuant to 37 CFR § 1.98(d), copies of the references listed on the attached Form PTO-1449 are not now being supplied.
- ☐ C. This application is a PCT national stage application, all references listed on the attached Form PTO-1449 were cited in the international search report, and PCT/DO/EO/903 indicates that both the international search report and the copies of the references listed on the attached Form PTO-1449 are in this national stage file. Therefore, copies of the references listed on the attached Form PTO-1449 are not now being supplied.

### III. Concise Statement of Relevance

- ☐ A. All references listed on the attached Form PTO-1449 are in the English language, and, therefore, a concise statement of relevance is not required.
- ☒ B. A concise statement of the relevance of all references listed on the attached Form PTO-1449 that are *not in the English language*, is being provided on a separate sheet attached herewith.
- ☒ C. Some of the references listed on page 3 of the attached Form PTO-1449 were cited in the International Search Report issued by the European Patent Office, and a copy of that search report, which indicates the degree of relevance found by the International Searching Authority, is attached.

- ☐ D. This application is a PCT national stage application, all references listed on the attached Form PTO-1449 were cited in the international search report, and a copy of that search report, which indicates the degree of relevance found by the International Search Authority, is attached.

**IV. Additional Information**

- ☐ A. In addition to the references listed on the attached Form PTO-1449, Applicants wish to bring to the attention of the Examiner the following abandoned or co-pending U.S. patent applications:

[Pursuant to 37 CFR § 1.98(a)(2)(iii), copies of these applications are not being submitted.]

- ☒ B. In addition of the references listed on the attached Form PTO-1449, Applicants wish to bring to the attention of the Examiner the information provided on the attached sheet.

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Consideration of the foregoing in relation to this application is respectfully requested.

Respectfully submitted,  
NORRIS McLAUGHLIN & MARCUS, P.A.

By Victoria M. Malia  
Victoria M. Malia  
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New York, New York 10017  
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Enclosures (4):      Concise Statement of Relevance of Non-English References  
                                 Additional Information  
                                 Form PTO-1449 plus copy  
                                 International Search Report issued by EPO

**Express Mail Label No.      EL 767491022 US**

**Date of Deposit:              December 28, 2000**

**Concise Statement of Relevance of Non-English References:**

The article "Schlegel et al., Archiv fur Mikrobiologie 38, 209-222 (1961): "Ein Submersverfahren . . . Untersuchungen" was previously submitted in an IDS to the USPTO. Applicants note that this reference is cited on page 7, lines 12-13 in the instant specification. The relevance of this reference is that it teaches a medium that is useful for growing the bacteria as described in the examples of the instant application.

WO 94/02621 is in the French language and is listed on the International Search Report as an "X" reference. The equivalency table attached to the International Search report lists this reference as being substantially equivalent to US 5,712,132, a copy of which is submitted with the IDS filed in the parent application.

EP 0583 687 listed in the International Search Report as an "X" reference. The equivalency table attached to the International Search report lists this reference as being substantially equivalent to US 5,510,252, a copy of which was previously submitted by Applicants during the prosecution of the parent application.

EP 0761 817 is in the German language and is listed on the International Search Report as a "P, X" reference. Because the equivalency table does not list any English equivalents, Applicants submitted a Derwent English abstract of this reference in the parent application. Applicants also note that this reference is not prior art, as its publication date occurred after Applicants priority date.

**Additional Information:**

WO 95/02062 listed on the International Search Report as an “X” reference was previously cited by the Examiner during the prosecution of the parent application.

WO 97/35999 is listed on the International Search Report as an “A” reference. Applicants note that WO 97/35999 has an international publication date of 2 October 1997. Thus, publication of this reference occurred after the 29 November 1996 priority filing date of Applicants’ application DE 196 49655.1. Thus, this published PCT application is not prior art to the instant application.



**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

Sheet 1 of 3

**U.S. PATENT DOCUMENTS**

	Document No.	Date	Name	Class	Subclass	Filing Date If Appropriate
AA	4,847,422	07/11/89	Klemola et al.			
AB	5,017,388	05/21/91	Rabenhorst et al.			
AC	5,128,253	07/07/92	Labuda et al.			
AD	5,358,861	10/25/94	Markus et al.			
AE	5,510,252	04/23/96	Hopp et al.			

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09/15/96  
12/28/00

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

AF	Tadasa, Agric.Biol.Chem., 41 (6), 925-929 (1977): "Degradation of Eugenol by a Microorganism"					
AG	Tadasa et al., Agric.Biol.Chem., 47 (11), 2639-2640 (1983): "Initial Steps of Eugenol Degradation Pathway of a Microorganism"					
AH	Sutherland et al., Can.J.of Microbiology, 29, 1253-1257 (1983): "Metabolism of cinnamic, <i>p</i> -coumaric, , and ferulic acids by <i>Streptomyces setonii</i> "					
AI	Ötük, J.Ferment.Technol., vol. 63, no. 6, 501-506 (1985): "Degradation of Ferulic Acid by <i>Escherichia coli</i> "					
AJ	Abraham et al., Bioflavour '87, 399-413 (1987): "Microbial Transformations of Some Terpenoids and Natural Compounds"					
AK	Omori et al., Appl.Microbiol.Biotechnol, 29, 497-500 (1988): "Protocatechuic acid production from <i>trans</i> -ferulic acid ... acid catabolism"					
AL	Rahouti et al., Applied and Environmental Microbiology, vol. 55, no. 9, 2391-2398 (1989): "Metabolism Ferulic Acid by <i>Paecilomyces variotii</i> and <i>Pestalotia palmarum</i> "					
AM	English Abstract of JP 2195-871: 25.10.88-JP-267 284 (02.08.90) 09.03.89 as 055111 (1988)					
AN	English Abstract of JP 2200-192: 25.10.88-JP-267 285 (08.08.90) 09.03.89 as 055112 (1988)					
AO	English Abstract of JP 05227 980 (1992)					
AP	Labuda et al., Prog.Flavour Precursor Stud.Int.Conf. 477-482 (1992): "Microbial Bioconversion Process for the Production of Vanillin"					
AR	Rosazza et al., J.of Ind.Microbiology 15, 457-471 (1995): "Review: Biocatalytic transformations of ferulic acid: an abundant aromatic natural product"					
AS	Schlegel et al., Archiv für Mikrobiologie 38, 209-222 (1961): "Ein Submersverfahren ... Untersuchungen"					
AT	Jaeger et al., Current Microbiology, vol. 6, 333-336 (1981): "Partial Purification and Characterization of a Conniferyl Alcohol Dehydrogenase from <i>Rhodococcus erythropolis</i> "					

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Serial No. : 08/976,063 (Divisional of)  
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Sheet 2 of 3

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**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

- L. wry et al., J.Biol.Chem., 193, 265-275 (1951): "Protein Measurement with the Folin Phenol Reagent"
- Stegemann et al., Z.Naturforsch, 28c, 722-732 (1973): "Potato Proteins: Genetic and Physiological Changes, Evaluated by One- and Two-dimensional PAA-Gel-techniques"
- Laemmli, Nature, vol. 227, 680-685 (1970): "Cleavage of Structural Proteins during the Assembly of the Head of Bacteriophage T4"
- Marmur, J.Mol.Biol. 3, 208-218 (1961): "A Procedure for the Isolation of Deoxyribonucleic Acid from Micro-organisms"
- Nies et al., J.of Bacteriology, vol. 169, no. 10, 4865-4868 (1987): "Cloning of Plasmid Genes Encoding Resistance to Cadmium, Zinc, and Cobalt in *Alcaligenes eutrophus* CH34"
- Hanahan, J.Mol.Biol. 166, 557-580 (1983): "Studies of Transformation of *Escherichia coli* with Plasmids"
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- Sanger et al., Proc.Natl.Acad.Sci., vol. 74, no. 12, 5463-5467 (1977): "DNA sequencing with chain-terminating inhibitors"
- Mizusawa et al., Nucleic Acids Research, vol. 14, no. 3, 1319-1325 (1986): "Improvement of the dideoxy chain termination method for DNA sequencing by use of deoxy-7-deazaguan sine triphosphate in place of dGTP"
- Strauss et al., Analytical Biochemistry 154, 353-360 (1986): "Specific-Primer-Directed DNA Sequencing"

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Art Unit: 1652  
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Exr. Initial	Document Number	Date	Name	Class	Subclass	Filing Date	
	5,712,132	01/27/98	Mane et al.				
FOREIGN PATENT DOCUMENTS							
	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No
	0 583 687 A2	02/23/84	Germany			<input type="checkbox"/>	X
	EP 0 761 817 A2	03/12/97	Europe			<input type="checkbox"/>	X
	WO 94/02621	02/03/94	International			<input type="checkbox"/>	X
	WO 95/02062	01/19/95	International			<input type="checkbox"/>	X
	WO 97/35999	10/02/97	International			<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
OTHER DOCUMENTS (Author, Book or Journal Title, Volume, Page Numbers, Date)							
	Rabenhorst, J., Appl. Microbiol. Biotechnol. (1996) 46, 470-474: "Production of methoxyphenol-type natural aroma chemicals by biotransformation of eugenol with a new <i>Pseudomonas</i> sp."						
	English Abstract of EP 761817 (1997)						
Examiner:				Date Considered:			

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AF	Tadasa, Agric.Biol.Chem., 41 (6), 925-929 (1977): "Degradation of Eugenol by a Microorganism"
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	WO 95/02062	01/19/95	International			<input type="checkbox"/>	X
	WO 97/35999	10/02/97	International			<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
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